

WHAT IS CLAIMED IS:

1. A technique for improving the adhesion between a first rubber component and a second rubber component in a process for manufacturing a cured rubber article, said technique comprising the steps of: (1) positioning a layer of an adhesion-promoting rubber composition which is comprised of (a) from about 10 weight percent to about 40 weight percent trans-1,4-polybutadiene, wherein said trans-1,4-polybutadiene has a number average molecular weight which is within the range of 50,000 to 120,000 and wherein said trans-1,4-polybutadiene has a trans-microstructure content which is within the range of about 60 percent to about 90 percent and (b) from about 60 weight percent to about 90 weight percent of at least one rubbery polymer, (2) bringing the first rubber component into contact with one side of the layer of adhesion-promoting rubber composition and bringing the second rubber composition into contact with the other side of the layer of adhesion-promoting rubber composition and (3) curing the first rubber component, the second rubber component, and the adhesion-promoting rubber composition together under conditions of heat and pressure to produce the cured rubber article.
2. A technique as specified in claim 1 wherein said trans-1,4-polybutadiene has a number average molecular weight which is within the range of about 70,000 to about 100,000.
3. A technique as specified in claim 2 wherein said rubbery polymer is selected from the group consisting of natural rubber, styrene-butadiene

rubber, synthetic polyisoprene, isoprene-butadiene rubber, styrene-isoprene-butadiene rubber and cis-1,4-polybutadiene.

5       4. A technique as specified in claim 2 wherein  
said rubbery polymer is natural rubber.

10      5. A technique as specified in claim 2 wherein  
said rubbery polymer is styrene-butadiene rubber.

15      6. A technique as specified in claim 3 wherein  
said adhesion-promoting composition is comprised of  
about 15 weight percent to about 30 weight percent of  
said trans-1,4-polybutadiene and from about 70 weight  
percent to about 85 weight percent of said rubbery  
polymer.

20      7. A technique as specified in claim 6 wherein  
said trans-1,4-polybutadiene has a trans-  
microstructure content which is within the range of  
about 75 percent to about 85 percent.

25      8. A technique as specified in claim 7 wherein  
said adhesion-promoting composition is comprised of  
about 18 weight percent to about 22 weight percent of  
said trans-1,4-polybutadiene and from about 78 weight  
percent to about 82 weight percent of said rubbery  
polymer.

30      9. A technique as specified in claim 8 wherein  
said trans-1,4-polybutadiene has a trans-  
microstructure content which is within the range of  
about 78 percent to about 82 percent.

35      10. A technique as specified in claim 6 wherein

said rubbery polymer is natural rubber.

11. A technique as specified in claim 6 wherein  
said rubbery polymer is natural rubber.

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12. A technique as specified in claim 9 wherein  
said rubbery polymer is natural rubber.

10 13. A technique as specified in claim 1 wherein  
said trans-1,4-polybutadiene has a Mooney ML-4  
viscosity at 100°C which is within the range of about 5  
to about 20.

15 14. A technique as specified in claim 1 wherein  
the trans-1,4-polybutadiene has a melting point which  
is within the range of about 10°C to about 30°C.

20 15. A technique as specified in claim 14 wherein  
the trans-1,4-polybutadiene has a glass transition  
temperature which is within the range of about -100°C  
to about -80°C.

25 16. A technique as specified in claim 1 wherein  
said layer of the adhesion-promoting rubber  
composition has a thickness of about 10 mils to about  
300 mils.

30 17. A technique as specified in claim 1 wherein  
said layer of the adhesion-promoting rubber  
composition has a thickness of about 50 mils to about  
160 mils.

35 18. A technique as specified in claim 1 wherein  
said layer of the adhesion-promoting rubber  
composition has a thickness of about 80 mils to about

120 mils.

19. A techniques as specified in claim 1 wherein  
the first rubber composition, the second rubber  
5 composition and the adhesion-promoting rubber  
composition are cured together at a temperature which  
is within the range of about 100°C to about 300°C.

10 20. A techniques as specified in claim 1 wherein  
the first rubber composition, the second rubber  
composition and the adhesion-promoting rubber  
composition are cured together at a temperature which  
is within the range of about 135°C to about 175°C.